Congressional Research Service
Informing the legislative debate since 1914

IN FOCUS

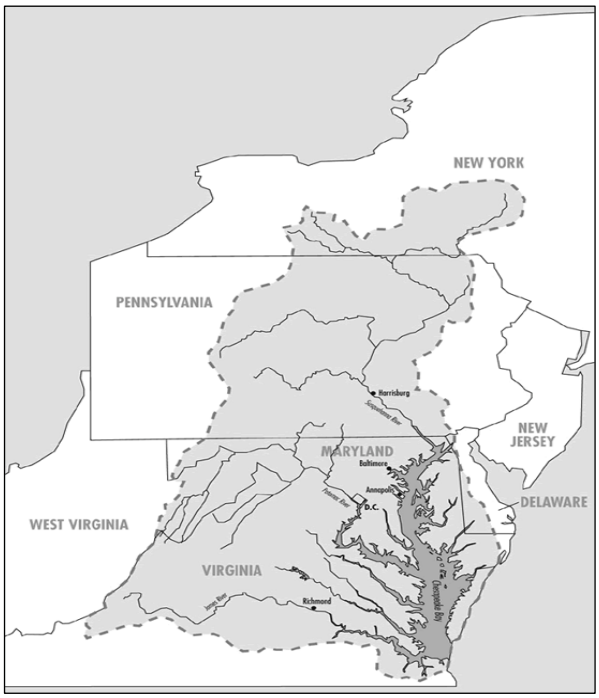
Updated July 5, 2017

Ecosystem Restoration of the Chesapeake Bay

Background

The Chesapeake Bay is the largest estuary in the United States. Its watershed comprises a 64,000 square-mile area and includes portions of the District of Columbia and the states of Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia (see **Figure 1**). Freshwater enters the bay from several tributaries, including the Potomac and Susquehanna Rivers, and drains into the Atlantic Ocean. The bay supports thousands of wildlife species, commercial and recreational fisheries, recreation activities, shipping, and other commercial activity. The health of the bay ecosystem has been a concern for Congress and stakeholders for many years. The decline of this ecosystem, first noticed decades ago, has been widely attributed to urban and agricultural development and to pollution from the bay's watershed.

Figure 1. Chesapeake Bay Watershed



Source: Chesapeake Bay Foundation.

Pollution from point sources, such as sewage treatment plants, and from nonpoint sources, such as agricultural runoff and animal waste, has contaminated the bay waters and ecosystem with excessive nutrients (e.g., phosphorous and nitrogen), toxic chemicals, and heavy metals. These substances have affected many plant and animal species and have led to the decline of fisheries, submerged aquatic vegetation, and dissolved oxygen levels. Increased commercial and urban development, loss of riparian and shore habitat, and overharvesting of fisheries have led to additional declines in the bay's ecological health.

The economic importance of the bay and concern about the decline of its resources are major reasons driving bay restoration efforts. The federal government has made significant investments in restoration activities in the bay watershed for almost 25 years, although federal involvement in the bay has occurred over a much longer period of time. Current restoration activities follow the Chesapeake Bay Agreement (Agreement), which was signed in 1983 and last updated in 2014. Federal agencies have made substantial commitments to this effort (in addition to having long-standing programs and responsibilities that affect the bay).

Chesapeake Bay Agreement

The Agreement is a pledge to restore the health of the Chesapeake Bay ecosystem. From the Agreement's inception in 1983 and latest revision in 2014, the Chesapeake Bay Executive Council has led activities carried out pursuant to the Agreement and its amendments. The council and signatories to the Agreement consist of the governors of Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia; the mayor of the District of Columbia; the chair of the Chesapeake Bay Commission; and the U.S. Environmental Protection Agency (EPA) Administrator. The council establishes the policy direction for restoring and protecting the bay and its living resources. The council also is accountable to the public for progress made under the Agreement.

Chesapeake Bay Program

The Agreement established the Chesapeake Bay Program (Program), which is authorized under the Clean Water Act, as amended (CWA; 33 U.S.C. §1267). The Program governs restoration activities in the bay and works with states and stakeholders through a committee structure to develop actions and strategies for restoration. The Program sets restoration objectives and indicators, and it implements and reports on restoration activities. The Program office is housed within EPA, which provides staff and funding to run the office. Primary funding for the Program comes from state governments. Federal funding was authorized under 33 U.S.C. §1267(j) at $40 million annually from FY2001 to FY2005 to fund environmental studies and grants that support restoration activities in the bay. Congress has appropriated funds for the Program after the authorization for appropriations expired in FY2005.

Federal Involvement in Restoring the Bay

Although multiple federal agencies participate in bay restoration, EPA is considered the lead agency. In 2009, the Federal Leadership Committee was established by Executive Order (E.O.) 13508. Members of this committee include senior representatives from the departments of Agriculture (USDA), Commerce (DOC), Defense (DOD), Homeland Security, the Interior (DOI), and Transportation,

as well as EPA. The Federal Leadership Committee coordinates federal programs and the agencies' activities with the Program. The committee also creates an annual action plan that describes how federal funding will be used in the upcoming fiscal year. Several federal departments receive funding to conduct activities that directly and indirectly contribute to restoring the bay. (See **Table 1**.) Final appropriations legislation and decisions that will determine the FY2018 funding for the Program and other federal restoration activities are unresolved.

Table 1. Chesapeake Bay Restoration Federal Funding, FY2012–FY2017

($ in millions)

Dept.	FY2013	FY2014	FY2015	FY2016	FY2017
USDA	$121.4	$111.0	$127.9	$160.0	157.0
DOC	$10.1	$8.4	$9.9	$16.0	13.4
DOD	$89.1	$118.8	$137.0	$127.0	50.1
DOI	$20.8	$25.4	$34.0	$39.0	42.5
EPA	$174.8	$197.5	$206.3	$193.8	160.8

Sources: Federal Leadership Committee, E.O. 13508, Strategy for *Protecting and Restoring the Chesapeake Bay Watershed 2014-2015 Milestones Progress Report*, May 2016, and Chesapeake Progress, Chesapeake Bay Program, 2017.

Total Maximum Daily Load

A central feature of the bay restoration strategy was the EPA's development of a Total Maximum Daily Load (TMDL) for the Chesapeake Bay in 2010 (Bay TMDL). A TMDL is a pollution budget stating how much pollutant loadings must be reduced to achieve state-established water quality standards developed pursuant to the CWA. The Bay TMDL is the largest single TMDL in terms of area covered developed to date. It addresses all segments of the bay and its tidal tributaries that are impaired from discharges of nitrogen, phosphorus, and sediment, with a goal of having TMDL implementation measures in place by 2025. The Bay TMDL is implemented through state-specific watershed implementation plans, which track progress toward achieving (1) an interim goal of having 60% of cleanup practices and policies needed to attain water quality standards in place by 2017 and (2) a final goal of having 100% of practices and policies in place by 2025. Each jurisdiction also has two-year cleanup goals called *milestones*. In June 2016, EPA evaluated progress toward achieving milestones and the 2017 and 2025 goals. Reductions of specific pollutants in individual jurisdictions varied widely. Collectively, the bay jurisdictions were on track to meet the watershed-wide 2017 targets for phosphorus and sediment but not nitrogen. For the 2025 goal, progress required to limit loadings and achieve targets varies across jurisdictions. (See CRS In Focus IF10283, *Restoring Chesapeake Bay's Water Quality: Where It Stands*.)

Potential Issues for Congress

Congressional involvement in restoring the bay has been through oversight, appropriations, and laws addressing parts of the bay restoration effort. Congress likely will continue oversight over bay restoration and may address certain key issues identified by stakeholders, including funding for bay restoration, progress in bay restoration, and the success of TMDL implementation.

Funding

Stakeholders question whether federal funding for bay restoration will be sufficient to improve the ecosystem. The majority of funding for bay restoration comes from states within the watershed. In FY2016, states contributed approximately $1.3 billion for restoration, compared to approximately $536 million from the federal government. The Administration proposes to eliminate EPA funding for the Program for FY2018, which would decrease funding for activities that directly aim to restore the bay and potentially limit the Program's ability to coordinate restoration activities. If EPA funding for the bay is reduced, state and other federal agencies may continue to fund bay restoration activities within their authorities. In a hearing on EPA's FY2018 budget, EPA Administrator Scott Pruitt emphasized the importance of agency leadership and management in lieu of federal funds.

Progress in Restoring the Chesapeake Bay

Some contend that progress in restoring the bay has largely stalled. They note that many ecological problems persist and that efforts to curb pollution, development, and habitat alteration have fallen short of expectations. They cite progress reports put out by nonfederal entities such as the Chesapeake Bay Foundation, which reported that the overall health index score of the bay slightly improved from a D+ in 2014 to a C- in 2016.

Proponents of restoration efforts counter these claims by arguing that the prevention of further deterioration in the bay watershed, in light of increased development, is evidence of success. They also cite positive trends in some ecological indicators, such as an increasing blue crab population and declining levels of nutrient pollution through the implementation of the TMDL, as evidence of progress.

TMDL Implementation

Congress may consider evaluating whether the TMDL has been effective in reducing the excess nutrients in the bay. Some contend that the TMDL is successful by noting the reductions in phosphorus and sediments and estimates that several nutrient-reduction targets are expected to be met. Others contend that progress is limited and that the challenges for successful TMDL implementation continue. Some challenges, according to stakeholders, include continuing to reduce nutrients in the face of economic development and population growth; maintaining adequate funding for wastewater and stormwater infrastructure upgrades and improvements and for best management practices to reduce nutrients; and evaluating whether the largely voluntary approach to restoring waters impaired by nonpoint source pollution is an effective method to reduce nutrients.

Pervaze A. Sheikh, Acting Section Research Manager
Laura Gatz, Analyst in Environmental Policy

IF10627

Disclaimer